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Chicago World's Fair and the topographic maps of the United States Geological Survey and the Mississippi River commission. Most of the geology is from the geological map prepared for the Illinois Geological Survey.

AFTER making 15,000 tests on 50 railway bridges on the lines of eight different railroad systems of the country, Dean F. E. Turneure, of the college of engineering of the University of Wisconsin, is now compiling data which it is expected will eliminate the element of guess work in allowing for speed strain in bridge design. Heretofore there have been few actual data on the comparative effects of speeds on the different parts of bridges, so that allowance for such strain had to be made largely by guess. A few experiments were made with machinery imported from Germany, including those of Dean Turneure in 1907 on the St. Paul road, but the difficulty and expense prevented further investigation until Dean Turneure invented a machine of his own for the work. This is an electrical instrument which makes an autographic record of every slightest bending, shortening or stretching of the part of the bridge to which it is attached, when a train is crossing the bridge. Twelve duplicates of the machine were made in the shops of the college of engineering, and used simultaneously on different parts of the bridge, giving accurate data for comparison. Since it seems likely that not all of the fund of \$9,000 subscribed by American railroads to defray the expense of the investigation will be used in this series of tests, it is planned to start a second series of experiments involving a different feature.

NICKEL and cobalt are not produced in large quantities in the United States, the domestic output of nickel in 1908 coming from only two or three places and that of cobalt from only one place. Both metals are produced by a lead company at Fredericktown, Mo., and some nickel ore was shipped from Bunkerville, Nev. Other nickel deposits are known in various parts of the country, but no work of importance was done on them during 1908. Some nickel salts were made at a New Jersey refinery from electrolyte solutions ob-

tained in the refining of copper. In copper refining by electrolysis nickel contained in the raw copper anodes goes into solution in the electrolyte, and unless the solutions are changed before the amount of nickel reaches 1 per cent. of the solution, nickel is deposited with the copper. It is said that this causes the copper to lose some of its toughness. Before this factor in electrolytic refining was found to be serious it was impossible to make electrolytic copper equal to the best Lake Superior brands, but the refiners say that since this discovery they can make electrolytic copper equal to any other, and even superior to some in electroconductivity.

UNIVERSITY AND EDUCATIONAL NEWS

THE provisions of the will of Mr. John Stewart Kennedy have not been officially announced, and the reports which have been published are not exactly correct. Mr. Kennedy bequeathed one half of his vast estate to public purposes. The greater part of this estate is to be divided into sixty-four parts, and the bequests have been made on the basis of these parts. Thus to Columbia University and the other institutions receiving the largest bequests are devised three of the parts, not \$2,225,000, as has been stated. The announcement was based on the supposition that the value of these parts would be \$750,000, and it is believed that this is a very conservative estimate. If certain of the heirs die without issue, the property bequeathed to them is to be divided into four equal parts to be given, respectively, to Columbia University, the New York Public Library, the Metropolitan Museum of Art and the Presbyterian Hospital of New York City.

It is reported by cablegram that Mrs. Francis Speyer has bequeathed more than \$8,000,000 to public purposes. The bequests include \$1,000,000 to the Frankfort Academy of Social and Commercial Science, and \$1,000,000 for the furtherance of the research into the subject of cancer and lupus.

MR. WILLIAM D. SLOANE has given \$150,000 to the College of Physicians and Surgeons of

Columbia University for an addition to the Sloane Maternity Hospital.

THE New York *Evening Post* states that the bequest of Dr. Levi Ives Shoemaker, of Wilkes-Barre, Pa., of \$500,000 to the Medical School of Yale University will, at the expiration of a life interest, give the school an amount more than double its present funds, which, by the last report of the university treasurer, were \$222,687.

DR. G. B. LONSTAFF, of New College, Oxford, has given £2,400 to the university for forming an additional endowment for the maintenance and support of the Hope department of zoology.

THE laboratory of physics of the University of Illinois will be formally opened on November 26. President Pritchett, of the Carnegie Foundation, will make the dedicatory address, preceded by short addresses by the governor of Illinois, the president of the board of trustees, the president of the university and Dr. A. P. Carman, professor of physics. At a subsequent session addresses will be made by Professor David Kinley, dean of the graduate school and Professor Arthur G. Webster, of Clark University. On November 27, the American Physical Society will hold its regular meeting at the university.

THE formal inauguration of Dr. Edmund C. Sanford as president of Clark College will be held on founder's day, February 1, 1910.

PROFESSOR CLARENCE E. REID, who for the last four years has been assistant professor of electrical engineering at the Case School of Applied Science, has been appointed head of the department of physics and electrical engineering at the Mississippi Agricultural and Mechanical College.

DR. G. C. FRACKER has resigned the chair of philosophy and psychology at Coe College to accept the chair of psychology and education at the State Normal School of Marquette, Mich., where he succeeds Professor L. S. Anderson, who has gone to the University of Illinois. Dr. F. S. Newell has been appointed to the position in Coe College.

At the University of Birmingham Mr. J. S. C. Douglas has been appointed lecturer in pathology and bacteriology, and Mr. Leonard Doncaster, special lecturer in heredity and variation.

MR. GORDON MERRIMAN, of Trinity Hall, has been appointed to the studentship in medical entomology at Cambridge University, lately held by Mr. F. P. Jepson, of Pembroke College.

DISCUSSION AND CORRESPONDENCE

THE COMBINED COURSE LEADING TO THE DEGREES OF A.B. OR B.S., AND OF M.D.

THE combined course leading to the degrees of A.B. or B.S. and the degree of M.D. which is discussed by Professor Christian in his address at Leland Stanford University¹ is a topic of such importance that Professor Christian's comments ought not to go unanswered. His declaration that "These schools have succeeded in rendering the A.B. degree of less value and significance than formerly and have sacrificed one or two years of college work while seeking to conceal this fact by the award of the two degrees A.B. and M.D.," will hardly be accepted as a just and truthful statement of the facts, by the twenty-five or more institutions now offering the combined course. Those persons who maintain that the bachelor's degree should be awarded only to those students who have completed the rigid, classical four years' course of study formerly prescribed, may logically object to the substitution of science work for one half or more of this curriculum, such as has been permitted in Harvard University for many years. But this rigid, classical ideal was shattered more than thirty years ago by the institution of the elective system in Harvard University—a system which in one modification or another has come to be all but universal in our American universities.

Of the right of the fundamental medical sciences, anatomy, histology, embryology, physiology, physiological chemistry, bacteriology, pharmacology and fundamental pathology—to a place in the university curriculum

¹ SCIENCE, October 22, 1909.